

Bower, III
Serial no. 10/040,130
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In the claims:

1. (currently amended) A computer-implemented method comprising:
running of a worker process within a single-threaded, interrupt-free diagnostic mode of a
firmware environment also including an executive process, such that the worker process has
processor control while running and such that the executive process is unable to interrupt running
of the worker process and is unable to function unless and until the worker process transfers
processor control to the executive process;
 sending a signal from [[a]] the worker process to [[an]] the executive process, such that
processor control transfers from the worker process to the executive process so that the executive
process is able to function and such that the worker process is unable to function;
 receiving the signal by the executive process;
 determining by the executive process whether the worker process is improperly
functioning; and,
 in response to determining that the worker process is improperly functioning, terminating
the worker process by the executive process.
2. (currently amended) The method of claim 1, wherein the single-threaded, interrupt-free
diagnostic mode is a polling-based firmware environment, where sending the signal from the
worker process to the executive process further transfers processor control from the worker
process to the executive process.
3. (currently amended) The method of claim ~~[[2]]~~ 1, further comprising, otherwise,
returning the processor control from the executive process to the worker process, such that the
worker process is again able to function.

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4. (original) The method of claim 1, where sending the signal from the worker process to the executive process comprises calling an application program interface (API) of the executive process by the worker process.
5. (original) The method of claim 1, further comprising, otherwise, incrementing a hardware heartbeat counter by the executive process for the worker process.
6. (original) The method of claim 1, wherein determining by the executive process whether the worker process is improperly functioning comprises determining by the executive process whether the worker process is malfunctioning.
7. (original) The method of claim 1, wherein determining by the executive process whether the worker process is improperly functioning comprises determining by the executive process whether the worker process is a malicious process.
8. (currently amended) A system comprising:
a firmware environment having a single-threaded, interrupt-free diagnostic mode in which processes have complete processor control while running and such that other process are unable to interrupt a running process and are unable to function unless and until the running process transfers processor control;
an executive process within the single-threaded, interrupt-free diagnostic mode of the firmware environment and having a heartbeat interface; and,
a worker process and within the single-threaded, interrupt-free diagnostic mode of the firmware environment and periodically calling the heartbeat interface of the executive process for the executive process to determine whether the worker process is improperly functioning.

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9. (currently amended) The system of claim 8, ~~further comprising an operating environment in which the executive process and the worker process operate,~~ wherein the operating environment ~~having~~ has a hardware heartbeat counter incremented by the executive process in response to calls to the heartbeat interface of the executive process.

10.-11. (cancelled)

12. (original) The system of claim 8, further comprising a processor, such that calling of the heartbeat interface of the executive process by the worker process results in control of the processor being transferred from the worker process to the executive process.

13. (currently amended) The system of claim 8, further comprising:
a processor; and,
~~an operating environment for the processor having a hardware heartbeat counter, the executive process and the worker process operating in the operating environment,~~
wherein the executive process receives control of the processor from the worker process upon the worker process calling the heartbeat interface of the executive process, the executive process terminating the worker process in response to determining that the worker process is improperly functioning and otherwise incrementing the hardware heartbeat counter of the operating environment and returning control of the processor to the worker process.

14. (original) The system of claim 8, wherein the executive process terminates the worker process upon determining that the worker process is improperly functioning.

15. (original) The system of claim 8, wherein the heartbeat interface comprises a heartbeat application programming interface (API).

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16. (currently amended) An article comprising:
a computer-readable medium; and,
means in the medium for receiving a call to a heartbeat interface from a process within a single-threaded, interrupt-free diagnostic mode of a firmware environment such that processor control is received from the process and such that otherwise the process is unable to be interrupted, for terminating the process, in response to determining that the process is improperly functioning, and for returning the processor control back to the process in response to determining that the process is properly functioning.
17. (original) The article of claim 16, wherein the means in the medium is further for incrementing a hardware heartbeat counter prior to returning the processor control back to the process in response to determining that the process is properly functioning.
18. (original) The article of claim 16, wherein the means in the medium is further for determining whether the process is improperly functioning by determining whether the process is malfunctioning.
19. (original) The article of claim 16, wherein the means in the medium is further for determining whether the process is improperly functioning by determining whether the process is a malicious process.
20. (original) The article of claim 16, wherein the medium is one of a modulated carrier signal and a recordable data storage medium.